Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

1. (currently amended) A system comprising:

a remotely situated plurality of sensors that sense information;

a locally situated workstation that receives the information from the remotely situated plurality of sensors in the form of a set of data; and

a Fast Fourier Transform (FFT) analyzer interfaced with the plurality of sensors and workstation to receive information from the plurality of sensors in the form of time domain data points, to transform the data points into a lesser number of frequency domain data points to facilitate transmission as a set of data from the plurality of sensors to the locally situated workstation; wherein the FFT analyzer comprises a display selected from the group consisting of ~~spectral amplitude versus frequency display, an octave display~~, a 1/3 octave display, ~~a 1/6 octave display,~~ a 1/12 octave display, a 1/24 octave display, and an at least 100 line display ~~and a waterfall display~~.

2. (original) The system of claim 1, wherein said FFT analyzer is interfaced with the workstation to receive an input from the workstation to control the plurality of sensors.

3. (original) The system of claim 1, wherein the plurality of sensors monitors a test object and generates sensor signals.

4. (original) The system of claim 1, wherein the plurality of sensors monitors a test object and generates sensor signals, the system further comprising a data acquisition system that acquires the sensor signals from the plurality of sensors and digitizes the plurality of sensors into a digitized sensor data signal using an analog-to-digital converter device.

5. (original) The system of claim 1, wherein the plurality of sensors comprise a vibration sensor.

6. (original) The system of claim 1, wherein the plurality of sensors comprise a vibration sensor selected from the group consisting of an accelerometer, a proximity probe and a fiber optic accelerometer.

7. (original) The system of claim 1, wherein the plurality of sensors comprise a temperature sensor.

8. (original) The system of claim 1, wherein the plurality of sensors comprise a temperature sensor selected from the group consisting of a thermocouple, a thermistor, an RTD and an infrared sensor.

9. (original) The system of claim 1, wherein the plurality of sensors comprise a probe that provides a once per revolution signal .

10. (original) The system of claim 1, wherein the plurality of sensors comprise a strain measurement sensor.

11. (original) The system of claim 1, wherein the plurality of sensors comprise a strain measurement sensor selected from the group consisting of a strain gauge and a thermal strain system.

12. (original) The system of claim 1, wherein the plurality of sensors comprise a time code generator that provides a measure of time.

13. (original) The system of claim 1, wherein the plurality of sensors comprise a voltage sensor.

14. (original) The system of claim 1, wherein the plurality of sensors comprise a current sensor.

15. (original) The system of claim 1, wherein the plurality of sensors comprise a current sensor selected from the group consisting of a Watt meter, a Vars meter and a speed meter.

16. (original) The system of claim 1, wherein the plurality of sensors comprise a pressure sensor.

17. (original) The system of claim 1, wherein the plurality of sensors comprise a microphone.

18. (original) The system of claim 1, wherein the plurality of sensors comprise a camera.

19. (original) The system of claim 1, additionally comprising a central control system that includes an alarm apparatus that generates an alarm trigger whenever a sensed digitized data signal exceeds a selected alarm threshold.

20. (original) The system of claim 1, wherein the workstation includes an audio monitoring system that allows an operator to hear a sensor signal.

21. (original) The system of claim 1, wherein the workstation comprises an audio monitoring system selected from the group consisting of a speaker, a surround sound speaker system, and a headphone.

22. (original) The system of claim 1, wherein the workstation comprises an output device selected from the group consisting of a plotter, a color printer, an e-mail message system and a printer.

23. (original) The system of claim 1, wherein the workstation comprises a processing device and a storage device selected from the group consisting of a hard disk, a writable CD and a flexible disk.

24. (canceled)

25. (original) The system of claim 1, wherein the FFT analyzer comprises a display of averaged data to reduce random signal fluctuations.

26. (original) The system of claim 1, used to monitor a test object selected from the group consisting of a steam turbine, a gas turbine, a generator, a heat recovery boiler, an aircraft engine and a gear unit.

27. (original) The system of claim 1, wherein the workstation comprises an input device selected from the group consisting of a keyboard, a mouse and a wireless mouse.

28. (original) The system of claim 1, wherein the FFT is remotely situated in association with the plurality of sensors

29. (original) The system of claim 28, further comprising a switching apparatus remotely situated and controllably connected to the plurality of sensors to permit selection of a sensor of the plurality from the workstation.

30. (canceled)

31. (canceled)

32. (canceled)

33. (canceled)

34. (canceled)

35. (canceled)

36. (canceled)

37. (canceled)

38. (currently amended) A method comprising:

remotely monitoring an operating test object with a plurality of sensors to generate time domain data points;

remotely transforming the time domain data points to frequency domain data points with a Fast Fourier Transform (FFT) analyzer; and

transmitting the frequency domain data points to a local workstation;

wherein a display is generated from the time domain data points, the display comprising ~~a spectral amplitude versus frequency display, an octave display~~, a 1/3 octave

display, ~~a 1/6 octave display,~~ a 1/12 octave display, a 1/24 octave display, or an at least 100 line display ~~or a waterfall display~~.

39. (original) The method of claim 38, wherein said FFT analyzer receives an input from the workstation to control the plurality of sensors.

40. (original) The method of claim 38, additionally comprising monitoring a test object with the plurality of sensors and generating sensor signals from the monitoring.

41. (original) The method of claim 38, additionally comprising monitoring a test object with the plurality of sensors, generating sensor signals from the monitoring and acquiring the sensor signals with a data acquisition system that digitizes the plurality of sensors into digitized sensor data signals.

42. (original) The method of claim 38, wherein the plurality of sensors generate vibration data points.

43. (original) The method of claim 38, wherein the plurality of sensors generate temperature data points.

44. (original) The method of claim 38, wherein the plurality of sensors generate once per revolution signal data points.

45. (original) The method of claim 38, wherein the plurality of sensors generate measurement signal data points.

46. (original) The method of claim 38, wherein the plurality of sensors generate strain measurement signal data points.

47. (original) The method of claim 38, wherein the plurality of sensors generate time coded signal data points.

48. (original) The method of claim 38, wherein the plurality of sensors generate voltage signal data points.

49. (original) The method of claim 38, wherein the plurality of sensors generate

measurement current data points.

50. (original) The method of claim 38, wherein the plurality of sensors generate pressure signal data points.

51. (original) The method of claim 38, wherein the plurality of sensors generate sound signal data points.

52. (original) The method of claim 38, wherein the plurality of sensors generate visual signal data points.

53. (original) The method of claim 38, comprising sensing the frequency domain data points at the workstation and generating an alarm whenever a sensed digitized data signal exceeds a selected alarm threshold.

54. (canceled)

55. (original) The method of claim 38, further comprising generating a display of averaged data to reduce random signal fluctuations from the time domain data point.

56. (original) The method of claim 38, comprising monitoring an operating test object selected from the group consisting of a steam turbine, a gas turbine, a generator, a heat recovery boiler, an aircraft engine and a gear unit.

57. (canceled)

58. (canceled)

59. (canceled)

60. (canceled)

61. (canceled)